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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/777,454

02/06/2001

Yoshihiro Shoji

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06/18/2004

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EXAMINER

TSE, YOUNG TOI

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,454

Applicant(s)

SHOJI, YOSHIHIRO

Examiner

YOUNG T. TSE

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 5, 6A-6B, 7A-7C and 8A-8C should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because the signal "S13" and "(SWD-1)" shown in Fig. 3 should be labeled -- S3 -- and -- (SWD=1) --, respectively. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be

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removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: on page 19, lines 6, 11, 14 and 16, "Fig." Should be – Figs. --; on page 22, lines 4, 8 and 9, "claim 1" and "claim 3" should be deleted since they are not the final version of the claims; on page 23 (line 14), page 25 (lines 13 and 18), page 26 (line 12), page 28 (line 24), page 31 (line 19), page 33 (line 24) and page 35 (line 7), "S13" should be – S3 --; and on page 37, line 8, "4" should be – 3 --. Appropriate correction is required.

Claim Objections

5. Claim 4 is objected to because of the following informalities: in claim 4, lines 6 and 7, "compares" and "a predetermined" should be – a comparator compares – and – the predetermined --, respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 (lines 5 and 12), claim 2 (line 5), claim 3 (lines 5-6), claim 4 (line 4), claim 5 (line 4), claim 7 (line 5), claim 8 (lines 10-11 and 17), claim 9 (lines 10-11 and 21), claim 10 (lines 5 and 10-11), claim 11 (lines 11 and 14), and claim 12 (lines 8 and 14-15), the phrases "the synchronization pattern", "said synchronization pattern", "said specific bit interval", and "said comparison circuit" all lack antecedent basis since the independent claims recite "synchronization patterns", "a predetermined synchronization pattern" or "specific bit intervals".

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3-4, 6 and 8-12 rejected under 35 U.S.C. 102(b) as being anticipated by Sands et al..

Sands et al. (U.S. Patent No. 5,757,869) discloses a loop frame synchronization processor unit in Figure 10 for detecting the frame synchronization pattern in each of successive frames of serial digital data as to enable time alignment in the course of multiplexing demultiplexed serial data streams into a single serial data stream format.

Referring to Figure 10, the loop frame synchronization processor unit comprises a frame synchronization word detector section 100 the detail embodiment is shown in Figure 11, a frame synchronization word location comparator section 200 the detail embodiment is shown in Figure 12, a synchronization word window generator 300 the detail embodiment is shown in Figure 13, a counter-register section the detail embodiment is shown in Figure 14, a frame synchronization alignment control section 500 the detail embodiment is shown in Figure 15, and a majority vote logic circuit 93 the detail embodiment is shown in Figure 16.

Referring to Figure 11, the frame synchronization word detector section 100 comprises a shift register 101 receives an incoming digital data stream comprised of successive frames of digital data, accommodates the length of the sign and magnitude bit segments of the frame synchronization word, and provides a prescribed additional delay to the input data stream to allow majority vote processing and proper placement of a frame synchronizing FS signal by the majority vote logic circuit 93; a comparator 111 compares the contents of the shift register with a stored frame synchronization pattern reference code to provide a synchronization detection signal; a counter 121 generates a good loop output signal; and a counter 131 combines the synchronization detected signal and frame synchronization word location signals to determine whether

there is a perfect match of the frame synchronization word with locations FSWL1 or FSWL2. If not, all the potential locations are checked by the majority vote logic circuit 93. See column 10, lines 4-53.

With respect to claims 1, 8, 10 and 12, the shift register 101 and the comparator 111 correspond to the comparison circuit; the counter 121, the counter 131 and the majority vote logic circuit 93 together or the counter 121, the counter 131, the frame synchronization word location comparator section 200, the synchronization word window generator 300, the counter-register section 400, the frame synchronization alignment control section 500 and the majority vote logic circuit 93 together correspond to the synchronization processing circuit.

With respect to claims 3-4, 6, 9 and 11, the shift register 101 and the comparator 111 correspond to the comparison circuit; the counter 121 corresponds to the count circuit; the counter 131 corresponds to the delay circuit; and the majority vote logic circuit 93 along or the frame synchronization word location comparator section 200, the synchronization word window generator 300, the counter-register section 400, the frame synchronization alignment control section 500 and the majority vote logic circuit 93 together corresponds to the synchronization processing state judging circuit. Note the claimed subject matter of claims 4 and 6 is shown in Figure 11.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sands et al..

Although Sands does not explicitly show or suggest that the incoming digital data stream to the shift register 101 comprises packet data and head of the packet data as recited in claims 2 and 7 and the counter 131 is a FIFO circuit as recited in claim 5.

With respect to claims 2 and 7, in a communications system, it is obvious and well known to a person skill in the art to know that a synchronization detection circuit for detecting and synchronizing a plurality of data streams wherein each data stream includes a header (synchronization bits) followed by information data (packet having a specific number of bits). Therefore, it would have been obvious to one of ordinary skill in the art that the incoming digital data stream shown in Sands Figure 11 comprises header or synchronization information and packets or data information to separate the incoming data streams into section by section or time slots in order to detect or synchronize the transmitted data streams of the transmit circuits.

With respect to claim 5, it is well known to a person skill in the art that a counter is also a register, the counter 131 shown in Figure 11 counts or shifts the good loop output signal from the counter 121. It is obvious and well known to a person skill in the art to replace the counter 131 with a FIFO register in Figure 11 in order to shift the good loop output signal from the counter 121 that the first bit of data input to the counter 131 will be the first bit of data output from the counter 131.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tom discloses an apparatus and method for comparing disk data to a synchronization pattern in order to identify byte boundaries and establish byte synchronization between a disk drive controller and the disk data.

Deguchi et al. discloses an apparatus and method for detecting a frame number in the signals consisting of synchronization patterns, without erroneous detection of frame number.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Young Tse** whose telephone number is **(703) 305-4736**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

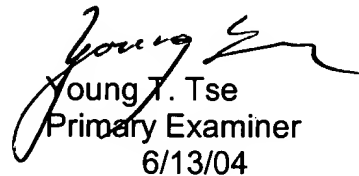
(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Young T. Tse
Primary Examiner
6/13/04